#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Madison et al.

Serial No.:

09/776,191

Filed:

February 2, 2001

For:

**NUCLEIC ACID MOLECULES ENCODING** TRANSMEMBRANE SERINE PROTEASES, THE ENCODED PROTEINS AND METHODS

**BASED THEREON** 

Art Unit:

1614

Examiner:

Unassigned

#### TRANSMITTAL LETTER

Commissioner for Patents Washington, D.C. 20231

Sir:

Transmitted herewith is an Information Disclosure Statement, Forms PTO-1449 (21 pages), and the cited references for filing in connection with the above-identified application. Because this Information Disclosure Statement is filed prior to receipt of a First Office Action on the merits in the above-referenced application, no fee is due. However, should it be determined that a fee for filing these papers is required, the Commissioner is authorized to charge Deposit Account No. 50-1213, as stated below:

(X)

The Commissioner is hereby authorized to charge any fees that may be due under 37 C.F.R. §§1.16-1.17 in connection with this paper or with this application during its entire pendency to Deposit Account No. 50-1213. A duplicate of this sheet is enclosed.

Respectfully submitted,

HELLER EHRMAN/WHITE & MCAULIFFE LLP

Stephanie L. Seidman Régistration No. 33,779

Dated: August 1, 2001

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# INFORMATION DISCLOSURE STATEMENT IN ACCORDANCE WITH 37 C.F.R. §§ 1.97-1.98

Commissioner for Patents Washington, D.C. 20231

Dear Sir:

Since this Information Disclosure Statement is filed before the receipt of a first Office Action on the merits for the above-captioned application, no filing fee is due. If it is determined that a fee is due, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-1213.

In accordance with the duty of disclosure imposed by 37 C.F.R. §1.56 to inform the Patent Office of all references known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant's representative hereby provides this Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§1.97-1.98. The Forms PTO-1449 (21 pages) and cited reference are provided herewith.

TECH CENTER 1600/2900

U.S.S.N. 09/776,191 MADISON, et al. IDS

The documents listed on the Forms PTO-1449 and supplied herewith are in the English language with the exception if Item HR. Item HR is a Japanese language reference by Shiozaki et al. and includes an English Language abstract. Hence, in accordance with the requirements of 37 C.F.R. §1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

Applicant also makes known to the Examiner the following U.S. applications which are commonly owned and/or have one or more inventors in common.

U.S.S.N.(App. no.)	Filing Date	Docket No.
09/580,535	05/26/00	1604B
09/657,986	09/08/00	
09/716,036	11/17/00	1604C
09/717,473	11/20/00	1605
60/255,221	12/12/00	P1606
09/776,191	02/02/01	1607
60/293,267	05/23/01	P1611
60/275,592	03/13/01	P1613
60/278,166	03/22/01	P1614
60/279,228	03/27/01	P1615
60,291,501	05/15/01	P1615B
60/291,001	05/14/01	P1616
Int'l Appln. No.	Filing Date	Docket No.
PCT/US01/03471	02/02/01	1607PC

Although these documents are made known to the Patent and Trademark Office in compliance with Applicant's duty of disclosure, such disclosure is not to be construed as an admission by Applicant or Applicant's representative that any of the references, singly or in any combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. §1.97(h), the filing of this Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(b) exists.

U.S.S.N. 09/776,191 MADISON, et al. IDS

Applicant respectfully requests that the Examiner review the foregoing reference and it be made of record in the file history of the above-captioned application.

Respectfully submitted,
HELLER EHRMAN WHITE & MCAULIFFE LLP

Stephanie / Seidman Registration No. 33,779

Dated: August 1, 2001

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#### SERIAL NO. FORM PTO-1449 (Modified) ATTY. DOCKET NO. 24745-1607 09/776,191 **APPLICANT** LIST OF PATENTS AND PUBLICATIONS FOR MADISON et al.

APPLICANT'S INFORMATION DISCLOSURE STATEMENT

FILING DATE

February 2, 2001

**GROUP** 1614

#### U.S. PATENT DOCUMENTS

EXAMINER INITIAL			D	OCUM	IENT N	NUMBI	ER		DATE	NAME	CLASS	SUB CLASS	FILING DATE
	Α	4	1	7	9	3	3	7	12/18/79	Davis <i>et al.</i>	435	181	07/28/77
	В	4	3	0	1	1	4	4	11/17/81	lwashita <i>et al.</i>	424	78	07/10/80
	С	4	4	9	6	6	8	9	01/29/85	Mitra	525	54.1	12/27/83
	D	4	6	4	0	8	3	5	02/03/87	Shimizu <i>et al.</i>	424	94	10/28/83
	E	4	6	7	0	4	1	7	06/02/87	Shimizu <i>et al.</i>	514	6	02/21/86
	F	4	7	9	1	1	9	2	12/13/88	Nakagawa <i>et al.</i>	530	399	06/18/87
	G	4	9	8	0	2	8	6	12/25/90	Morgan et al.	435	172.3	01/03/89
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	I	5	2	7	0	1	7	0	12/14/93	Schatz <i>et al.</i>	435	7.37	10/16/91
	J	4	9	5	2	4	9	6	08/28/90	Studier <i>et al.</i>	435	91	12/29/86
	K	5	2	1	5	8	9	9	06/01/93	Dattagupta	435	6	08/23/90
	L	5	4	3	6	1	2	8	07/25/95 <sup>°</sup>	Harpold <i>et al.</i>	435	6	01/27/93
	М	5	4	8	2	8	4	8	01/09/96	Dickson <i>et al.</i>	435	219	02/22/94
	N	5	6	1	2	4	7	4	03/18/97	Patel	536	27.14	06/30/94
	0	5	7	9	2	6	1	6	08/11/98	Persico <i>et al.</i>	435	7.21	06/05/95
	Р	5	9	7	2	6	1	6	10/26/99	O'Brien <i>et al.</i>	435	6	02/20/98
	Q	6	1	2	1	2	3	8	09/19/00	Dower et al.	514	13	02/03/99

#### FOREIGN PATENT DOCUMENTS

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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Filed:

FORM PTO-1449 (Modified)	ATTY. DOCKET NO. SERIAL NO. 24745-1607 09/776,191				
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE	APPLICANT MADISON et al.				
STATEMENT	FILING DATE February 2, 2001	GROUP 1614			

## FOREIGN PATENT DOCUMENTS

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AF	9	5	1	1	7	5	5	05/04/95	PCT				
AG	9	5	3	4	3	2	6	12/21/95	PCT				

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АН	Abraham et al., "Immunochemical Identification of the Serine Protease Inhibitor $a_1$ -Antichymotrypsin in the Brain Amyloid Deposits of Alzheimer's Disease", Cell, $\underline{52}$ :487-501; (1988)
AI	Alam <i>et al.</i> , "Reporter Genes: Application to the Study of Mammalian Gene Transcription", <i>Anal. Biochem.</i> , <u>188</u> :245-254; (1990)
AJ	Alonso et al., "Effects of synthetic urokinase inhibitors on local invasion and metastasis in a murine mammary tumor model", Breast Cancer Res. Treat., 40:209-223; (1996)
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Coombs et al., "Distinct Mechanisms Contribute to Stringent Substrate Specificity of

Tissue-type Plasminogen Activator", *J. Biol. Chem.*, <u>271(8)</u>:4461-4467; (1996)

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4328; (1998)

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BN	Cotten et al., "Receptor-Mediated Transport of DNA into Eukaryotic Cells", Meth. Enzymol., 218:619-645; (1993)
во	Crowley et al., "Prevention of metastasis by inhibition of the urokinase receptor", Proc. Natl. Acad. Sci. U.S.A., 90:5021-5025; (1993)
BP	Cumber et al., "Structural Features of the Antibody-A Chain Linkage that Influences the Activity and Stability of Ricin A Chain Immunotoxins", Bioconj. Chem., 3:397-401; (1992)
BQ	Cwirla et al., "Peptides on phage: A vast library of peptides for identifying ligands", Proc. Natl. Acad. Sci. U.S.A., 87:6378-6382; (1990)
BR	Delaria et al., "Characterization of Placental Bikunin, a Novel Human Serine Protease Inhibitor", J. Biol. Chem., <u>272(18)</u> :12209-12214; (1997)
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ВТ	Ding et al., "Origins of the specificity of tissue-type plasminogen activator", Proc. Natl. Acad. Sci. U.S.A., 92(17):7627-7631; (1995)
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BV	Dower et al., "The Search for Molecular Diversity (II): Recombinant and Synthetic Randomized Peptide Libraries", An. Rep. Med. Chem., 26:271-280; (1991)
BW	Dryjanski <i>et al.</i> , "N-Tosyl-L-phenylalanine Chloromethyl Ketone, a Serine Protease Inhibitor, Identifies Glutamate 398 at the Coenzyme-Binding Site of Human Aldehyde Dehydrogenase. Evidence for a Second "Naked Anion" at the Active Site", <i>Biochem.</i> , 37(40):14151-14156; (1998)
вх	Dufer et al., "Differential Effect of the Serine Protease Inhibitor Phenyl Methyl Sulfonyl Fluoride on Cytochemically Detectable Esterases in Human Leucocytes and Platelets", Scand. J. Haematol., 32(1):25-32; (1984)
BY	Dzau et al., "Gene therapy for cardiovascular disease", TIBTECH, 11(5):205-210; (1993)
BZ	Eck et al., "Structure of TNF-a: Implications for Receptor Binding", J. Biol. Chem., 26:17605; (1989)

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Pancreatic Phospholipase A<sub>2</sub>", Pharmacol. Res. Commun., 16(7):637-645; (1984)

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нх	Smith et al., "Protein Loop Grafting to Construct a Variant of Tissue-type Plasminogen Activator That Binds Platelet Integrin allb\(\beta\)3", J. Biol. Chem., 270(51):30486-30490; (1995)
HY	Sonatore et al., "The Utility of FK506-Binding Protein as a Fusion Partner in Scintillation Proximity Assays: Application to SH2 Domains", Anal. Biochem., 240:289-297; (1996)
HZ	Stankiewicz et al., "3' Noncoding sequences of the CTA 1 gene enhance expression of the recombinant serine protease inhibitor, CPTI II, in Saccharomyces cerevisiae", Acta Biochim. Pol., 43(3):525-529; (1996)
IA	Steele et al., "Pigment epithelium-derived factor: Neurotrophic activity and identification as a member of the serine protease inhibitor gene family", <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 90(4):1526-1530; (1993)
IB	Stemple et al., "Isolation of a Stem Cell for Neurons and Glia from the Mammalian Neural Crest", Cell, 71:973-985; (1992)

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE	APPLICANT MADISON et al.	
STATEMENT	FILING DATE February 2, 2001	GROUP 1614

C	THER ART (Including Author, Title, Date, Pertinent Pages, Etc.)
IC	Strandberg et al., "Variants of Tissue-type Plasminogen Activator with Substantially Enhanced Response and Selectivity toward Fibrin Co-factors", J. Biol. Chem., 270(40):23444-23449; (1995)
ID	Sullivan et al., "Development of a Scintillation Proximity Assay for Calcineurin Phosphatase Activity", <i>J. Biomol. Screening</i> , 2:19-23; (1997)
IE	Tachias et al., "Variants of Tissue-type Plasminogen Activator That Display Extraordinary Resistance to Inhibition by the Serpin Plasminogen Activator Inhibitor Type 1", J. Biol. Chem., 272(23):14580-14585; (1997)
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I.I	Takeda et al., "Construction of chimaeric processed immunoglobulin genes containing mouse variable and human constant region sequences", Nature, 314:452-454; (1985)
IJ	Takeuchi et al., "Reverse biochemistry: Use of macromolecular protease inhibitors to dissect complex biological processes and identify a membrane-type serine protease in epithelial cancer and normal tissue", <i>Proc. Natl. Acad. Sci. USA</i> , <u>96</u> :11054-11061; (1999)
IK	Takeuchi <i>et al.</i> , "Cellular Localization of Membrane-type Serine Protease 1 and Identification of Protease-activated Receptor-2 and Single-chain Urokinase-type Plasminogen Activator as Substrates", <i>J. Biol. Chem</i> , <u>275(34)</u> :26333-26342; (2000)
IL	Tanimoto et al., "Hepsin, a Cell Surface Serine Protease Identified in Hepatoma Cells, Is Overexpressed in Ovarian Cancer", Cancer Res., 57:2884-2887; (1997)
IM	Tolstoshev, "Gene Therapy, Concepts, Current Trials and Future Directions", Annu. Rev. Pharmacol. Toxicol., 32:573-596; (1993)
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1P	Tsutsui et al., "Cross-linking of Proteins to DNA in Newly Synthesized Chromatin By Diisopropylfluorophosphate. A Serine Protease Inhibitor", Biochem. Biophys. Res. Commun., 123(1):271-277; (1984)
IQ	van der Krol et al., "Modulation of Eukaryotic Gene Expression by Complementary RNA or DNA Sequences", BioTech., 6(10):958-976; (1988)
IR	Veber et al., "The design of metabolically-stable peptide analogs", TINS, pages 392-396; (1985)
IS	Vu et al., "Identification and cloning of the Membrane-associated Serine Protease, Hepsin, from Mouse Preimplantation Embryos", J. Biol. Chem., 272(50):31315-31320; (1997)
IT	Wagner et al., "Nucleotide sequence of the thymidine kinase gene of herpes simplex virus type 1", Proc. Natl. Acad. Sci. U.S.A., 78(3):1441-1445; (1981)
IU	Wallrapp et al., "A Novel Transmembrane Serine Protease (TMPRSS3) Overexpressed in Pancreatic Cancer", Cancer, 60:2602-2606; (2000)
IA	Walsh et al., "Gene Therapy for Human Hemoglobinopathies", Proc. Soc. Exp. Biol. Med., 204:289-300; (1993)
IB	Warren et al., "Spi-1: an hepatic serine protease inhibitor regulated by GH and other hormones", Mol. Cell Endocrinol., 98(1):27-32; (1993)
IC	Watson et al., "The Fine Structure of Bacterial and Phage Genes", Book: Molecular Biology of the Gene, 4th Ed., The Bejacmin/Cummings Pub. Co., 1:224; (1987)
ID	Webber et al., "Prostate-specific Antigen, a Serine Protease, Facilitates Human Prostate Cancer Cell Invasion", Clin. Cancer Res., 1:1089-1094; (1995)
lF	Wellhöner <i>et al.</i> , "Uptake and Concentration of Bioactive Macromolecules by K562 Cells via the Transferrin Cycle Utilizing an Acid-labile Transferrin", <i>J. Biol. Chem.</i> , 266(7):4309-4314; (1991)
IG	Werner et al., "Identification of a Protein-binding Surface by Differential Admide Hydrogen-exchange Measurements", J. Mol. Biol., 225:873-889; (1992)
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IJ Wivel, "Regulatory considerations for gene-therapy strategies and products", TIBTECH, 11(5):189-191; (1993)

IK Woodard et al., "Chymase-Directed Serine Protease Inhibitor That Reacts with a Single

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like Protease", *J. Biol. Chem.*, 273(19):11894-11901; (1998)

IT Yamauchi *et al.*, "Anţi-Carcinogenic Effects of a Serine Protease Inhibitor (FOY-305) through the Suppression of Neutral Serine Protease Activity During chemical Hepatocarcinogenesis in Rats", *Hiroshima J. Med. Sci.*, 36(1):81-87 No abstract available (1987)

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.) Yanamoto et al., "Preventive Effect of Synthetic Serine Protease Inhibitor, FUT-175, on IW Cerebral Vasospasm in Rabbits", Neurosurgery, 30(3):351-357; (1992) Yanamoto et al., "Therapeutic Trial of Cerebral Vasospasm with the Serine Protease IX Inhibitor, FUT-175, Administered in the Acute Stage after Subarachnoid Hemorrhage", Neurosurgery, 30(3):358-363; (1992) IY Yang et al., "Ecotin: A Serine Protease Inhibitor with Two Distinct and Interacting Binding Sites", J. Mol. Biol., 279:945-957; (1998) Yen et al., "Synthesis of water-soluble copolymers containing photocleavable bonds", ΙZ Makromol. Chem., 190:69-82; (1989) Yi et al., "Bikunin, a serine Protease Inhibitor, is Present on the Cell Boundary of JA Epidermis", J. Invest. Dermatol., 113(2):182-188; (1999) JB Yu et al., "Message of nexin 1, a serine protease inhibitor, is accumulated in the follicular papilla during anagen of the hair cycle", J. Cell Sci., 108:3867-3874; (1995) JC Yuan et al., "Structrure of murine enterokinase (enteropeptidase) and expression in small intestine during development", Am. J. Physiol., 274:G342-G349; (1998) Zallipsky, "Functionalized Poly(ethylene glycol) for Preparation of Biologically Relevant JD Conjugates", *Bioconjugate Chem.*, <u>6</u>:150-165; (1995) JE Zhang et al., "Distinct Contributions of Residue 192 to the Specificity of Coagulation and Fibrinolytic Serine Proteases", *J. Biol. Chem.*, 274(11):7153-7156; (1999) JF Zhou et al., "The Vaccinia Virus K2L Gene Encodes a Serine Protease Inhibitor Which Inhibits Cell-Cell Fusion", Virology, <u>189</u>:678-686; (1992) Zijlstra et al., "Germ-line transmission of a disrupted  $\beta_2$ -microglobulin gene produced by JG homologous recombination in embryonic stem cells", Nature, 342:435-438; (1989) JH Zon, "Oligonucleotide Analogues as Potential Chemotherapeutic Agents", Pharm. Res., 5(9):539-549; (1988)

TITLE: NUCLEIC ACID MOLECULES ENCODING TRANSMEMBRANE SERINE PROTEASES, THE ENCODED PROTEINS AND METHODS BASED THEREON

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